INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We make Indiana a cleaner, healthier place to live.

Frank O'Bannon
Governor

Lori F. Kaplan
Commissioner

100 North Senate Avenue
P.O. Box 6015
Indianapolis, Indiana 46206-6015
(317) 232-8603
(800) 451-6027
www.in.gov/idem

Ms. Christine Brooks
East Chicago Waterway Management District
4522 Indianapolis Blvd.
East Chicago, Indiana 46312

June 19, 2002

Re: Registered Construction and Operation Status
089-15320-00471

Dear Ms. Brooks:

The application from East Chicago Waterway Management District, received on February 22, 2002 has been reviewed. Based on the data submitted and the provisions in 326 IAC 2-5.1, it has been determined that the construction and operation of the Indiana Harbor and Canal Confined Disposal Facility (CDF) to be located at the former ECI Site bordered by Cline Ave. to the north and Indianapolis Blvd. to the east in East Chicago, Indiana is classified as registered.

Pursuant to 326 IAC 2-5.1-2(g) or as otherwise cited, the following conditions shall be applicable to the construction and operation of the Indiana Harbor and Canal Confined Disposal Facility:

Cessation of Activities

1) All contaminant related activities that result in air emissions shall cease if the OAQ determines that:

   a) During operation, emissions of particulate matter (PM) or volatile organic compounds (VOC) exceed twenty-five (25) tons per year or more, or

   b) During operation, emissions of a single hazardous air pollutant (HAP) exceed ten (10) tons per year or combined HAPs exceed twenty-five (25) tons per year, or

   c) During construction or operation, emissions pose an unacceptable risk to public health.

Environmental Protection Plan

2) Prior to the beginning of any fieldwork, the Permittee shall submit to IDEM, an Environmental Protection Plan covering requirements for protecting the environment during the activities associated with the fieldwork. The Environmental Protection Plan shall include, but shall not be limited to the following:

a) A contaminant prevention statement identifying potentially hazardous substances to be used on the job site and intended actions to prevent accidental or intentional introduction of such materials into the air.

b) Fugitive dust control methods.

c) An air monitoring program to ensure that the release of airborne contaminants is minimized and that air emissions due to fieldwork activities do not adversely impact air quality in the surrounding community.

Environmental Protection Plans shall be submitted to:

Compliance Data Section
Office of Air Quality
100 North Senate Avenue
P.O. Box 6015
Indianapolis, Indiana 46206-6015

Fugitive Dust

3) Pursuant to 326 IAC 6-4 (Fugitive Dust Emissions), the Permittee shall not allow the generation of particulate matter (fugitive dust) to the extent that some portion of the material escapes beyond the property line or boundaries of the property, right-of way, or easement on which the source is located. A source shall be in violation of this rule when during operation of the CDF a qualified representative of the commissioner:

a) Observes visible emissions crossing the property line of a source at or near ground level; or

b) Measures ground level ambient air concentrations exceeding fifty (50) micrograms (total suspended particulate) per cubic meter above background concentrations for a sixty (60) minute period.

The source shall not be in violation of this rule during construction where every reasonable measure has been taken in minimizing fugitive dust emissions.

4) Pursuant to 326 IAC 6-1-11.1 (Lake County Fugitive Particulate Matter Control Requirements), the following particulate matter emission limitations shall apply:

a) The average instantaneous opacity of fugitive particulate emissions from unpaved roads and parking lots shall not exceed ten percent (10%).

b) The average instantaneous opacity of fugitive particulate emissions from batch transfer shall not exceed ten percent (10%).

c) The opacity of fugitive particulate emissions from storage piles and exposed areas shall not exceed ten percent (10%) on a six (6) minute average.

d) For material transportation activities:

i) There shall be a zero (0) percent frequency of visible emission observations of material during the inplant transportation of material by truck or rail at any time.

ii) The opacity of fugitive particulate emissions from the inplant transportation of material by front end loaders and skip hoists shall not exceed ten percent (10%) by averaging three (3) opacity readings taken at five (5) second intervals.

e) Any facility or operation not specified in this rule shall meet a twenty percent (20%), three (3) minute average opacity standard.

f) The source shall be in violation of this rule when a qualified representative of the commissioner or USEPA observes an exceedence of any of the emission limitations contained in a) through e).

g) The permittee shall keep the following documentation to show compliance with each of its control measures and control practices:

i) A map or diagram showing the location of all emission sources controlled, including the location, identification, length, and width of roadways.

ii) For each application of water or chemical solution to roadways, the following shall be recorded:

A) The name and location of the roadway controlled.

B) Application rate.

C) Time of each application.

D) Width of each application.

E) Identification of each method of application.

F) Total quantity of water or chemical used for each application.

G) For each application of chemical solution, the concentration and identity of the chemical.

H) The material data safety sheets for each chemical.

iii) For application of physical or chemical control agents not covered above, the following:

A) The name of the agent.

B) Location of application.

C) Application rate.

D) Total quantity of agent used.

E) If diluted, percent of concentration used.

F) The material data safety sheets for each chemical.

iv) A log recording incidents when control measures were not used and a statement of explanation.

h) The permittee shall submit copies of all records required by this condition to the department within twenty (20) working days of a written request by the department.

i) The permittee shall maintain the records required by this condition for at least three (3) years and shall make these records available for inspection and copying by department representatives during working hours.

j) The permittee shall submit a quarterly report to the department stating the following:

i) The dates any required control measures were not implemented.

ii) A listing of those control measures.

iii) The reasons that the control measures were not implemented.

iv) Any corrective action taken.

v) The quarterly report shall be submitted to the department thirty (30) days from the end of a quarter. Quarters end March 31, June 30, September 30, and December 31. The report shall be submitted to:

Compliance Data Section
Office of Air Quality
100 North Senate Avenue
P.O. Box 6015
Indianapolis, Indiana 46206-6015

5) The Permittee shall submit as part of each Environmental Protection Plan a fugitive dust control plan including:

a) Measures to control dust and prevent the movement of fugitive dust off site pursuant to 326 IAC 6-1-11.1(e).

b) Vehicle control and decontamination requirements to prevent the spread of pollution off site.

c) Erosion control including wind erosion of uncovered soils, stockpiles, and material piles.

Air Monitoring and Action Steps

6) To control emissions during construction and operation and ensure that air emissions resulting from construction, operation or other contract work activities do not impact the surrounding community, an Air Monitoring Program shall be submitted as part of each Environmental Protection Plan. The Air Monitoring Program shall include the pollutants to be measured, the sampling frequency for each pollutant, the sampling and analysis methods for each pollutant, turnaround times for analysis results, action levels for each pollutant, and the basis for taking corrective action. The corrective actions shall include but shall not be limited to the following:

   a) covering of stockpiles,

   b) spray foam application,

   c) reducing excavation rates,

   d) increasing groundwater pumping rates,

   e) altering dredging/placement rates,

   f) reducing the surface area of sediment placement, or

   g) reducing/ceasing dredging.

7) The air monitoring program for construction of the cutoff wall shall include but shall not be limited to the following:

   a) During construction activities that could reasonably be expected to cause emissions from contaminated soil or sediments, real-time monitoring for volatile organic compounds (VOCs) and particulate matter (PM) emissions shall be conducted. Field instruments designed to measure airborne VOC emissions shall be used, and visual observations of PM emissions shall be made. Real-time measurements shall be taken at least once every two hours, as well as once at the beginning of each work shift and once at the end of each work shift from multiple locations in areas immediately adjacent to the activities and most likely to be impacted by air emissions due to the activities.

   b) Air monitoring shall be performed both upwind and downwind during construction activities that could reasonably be expected to cause emissions from contaminated soil or sediments. National Institute for Occupational Safety and Health (NIOSH) air sampling methods for laboratory analysis shall be used for low-volume benzene and PCB monitoring.

   c) Before construction activities that could reasonably be expected to cause emissions from contaminated soil or sediments, background air monitoring shall be conducted daily for at least fourteen (14) days prior to the start of earth moving, groundbreaking or other construction, operation or placement activities.

   d) During construction activities that could reasonably be expected to cause emissions from contaminated soil or sediments, background levels for Benzene and PCBs shall be

measured on a daily basis during the first fourteen (14) days of the construction evaluation phase and twice weekly thereafter. Action levels and basis for corrective actions shall be those established in Condition 7e.

e) The following action level guidelines shall be followed and appropriate corrective actions shall be taken to control emissions. The turnaround time for results from real-time monitoring shall be immediately. The turnaround time for results from low-volume monitoring shall not exceed forty-eight (48) hours. Low-volume samples collected on Friday, Saturday or Sunday may have a longer turnaround period, not to exceed ninety-six (96) hours.

	Sampling/ Analytical Method(s)	Action Level	Basis for Corrective Action
Low-Volume Benzene Monitoring	NIOSH Method 1501	0.5 ppm above background	action level exceedence for 5 consecutive days or twice weekly
Low-Volume PCB Monitoring	NIOSH Method 5503	0.1 mg/m3 above background	action level exceedence for 5 consecutive days or twice weekly
Real-Time Volatile Monitoring	PID, FID, OVA or other approved field unit	5 ppm total VOCs	sustained reading for 15 minutes
Real-Time Particulate Monitoring	visual observations	visible dust plume moving from the work area	

8) The permittee shall maintain the records of all required air monitoring data and support information for a period of at least three (3) years from the date of monitoring sample, measurement, report, or application. These records shall be kept at the source where possible, and made available upon request of an IDEM, OAQ representative. The records may be stored elsewhere as long as they are available. If the Commissioner makes a written request for records to the Permittee, the permittee shall furnish the records to the Commissioner within a reasonable time.

a) Records of required air monitoring information shall include, where applicable:

i) The date, place, and time of sampling or measurements;

ii) The dates analyses were performed;

iii) The company or entity performing the analyses;

iv) The analytic techniques or methods used; and

v) The results of such analyses.

b) Support information shall include, where applicable:

i) The field activities underway in the vicinity of the monitoring; and

ii) All calibration and maintenance records.

9) The Permittee shall submit a Quarterly Air Monitoring Report covering the requirements of Condition 6 and Condition 7 that includes the following:

a) Any failure to perform monitoring or obtain valid results in accordance with the Air Monitoring Program required by Condition 6 must be reported.

b) All instances of monitoring results demonstrating that the action levels were exceeded for the period of time that called for corrective action shall be identified and reported.

c) Any corrective actions taken in response to the monitoring results reported under Condition 9(b) must be clearly identified.

The Air Monitoring Report required by this condition shall be submitted within 30 days of the end of each calendar quarter to:

Compliance Data Section
Office of Air Quality
100 North Senate Avenue
P.O. Box 6015
Indianapolis, Indiana 46206-6015

10) Ambient air monitoring using intermittent samplers shall be conducted around the perimeter of the CDF site to provide fence line concentrations of compounds of concern. The sampling and analysis shall be generally consistent with the methods used by the IDEM for monitoring ambient concentrations of hazardous air pollutants. The initial frequency will be every six days consistent with IDEM's sampling schedule. Upon evaluation of the first year's ambient air data, changes to the methods and frequency will be considered. Additional ongoing evaluations of the monitoring program will be conducted in the future as necessary. Any changes to the methods and frequency shall be made in consultation with IDEM, and do not require an amendment to this registration. The ambient air sampling shall be conducted and maintained during construction/operation activities. The monitoring results for each calendar quarter shall be made available on the World Wide Web within 60 days of the end of the quarter. The commissioner shall be kept informed of the current location on the World Wide Web.

Emissions Reporting

11) Approximately one year prior to dredging a given area of the harbor and canal, sediment sampling and analysis shall be performed in the areas to be dredged.

12) The sediment characterization data for a given year, along with the dredging and CDF operational parameters, shall be used in

conjunction with the air emissions model, which is based on the theoretical algorithms developed by Dr. Louis J. Thibodeaux, for application to dredged material dredging and placement, to calculate the amount of emissions to be generated during that year of dredging, placement, and CDF operation. The air emissions model shall be reviewed periodically to ensure that emissions are estimated using the best available methods.

13) The permittee shall submit detailed emissions reports to IDEM for review. Emissions estimate reports shall include the following:

a) On an annual basis, predictive emissions estimates based on the sediment sampling conducted in Condition 11 and the expected dredging and disposal volumes shall be reported at least 6 months prior to the commencement of dredging.

b) On a quarterly basis, the actual dredged volumes of sediments placed in the CDF shall be reported within thirty (30) days of the end of each calendar quarter in which dredging and placement take place.

The Emissions Reports required by this condition shall be submitted to:

Compliance Data Section
Office of Air Quality
100 North Senate Avenue
P.O. Box 6015
Indianapolis, Indiana 46206-6015

14) If estimates of emissions indicate an exceedence of the annual emission thresholds established in Condition 1 is likely, then modifications to the dredging/placement operations shall be incorporated into the Plans and Specifications for that operation to ensure compliance with this approval. Failure to make modifications to the dredging/placement operations shall be a violation of this approval. Potential modifications may include but are not limited to the following:

a) altering dredging/placement rates,

b) reducing the surface area of sediment placement, or

c) reducing/ceasing dredging.

15) Pursuant to 326 IAC 2-6, the Permittee must annually submit an emission statement for the source if during operation, the potential to emit volatile organic compounds (VOC) is equal to or greater than ten (10) tons per year. The annual statement must be received by April 15 of each year and contain the minimum requirements as specified in 326 IAC 2-6-4. The submittal shall cover the period defined in 326 IAC 2-6-2(8) (Emission Statement Operating Year). If applicable, the emission statement shall be submitted to:

Technical Support & Modeling Section
Office of Air Quality
100 North Senate Avenue
P.O. Box 6015
Indianapolis, Indiana 46206-6015

Notification of Operation and Compliance

16) An authorized individual shall provide an annual notice to the Office of Air Quality that the source is in operation and in compliance with this registration pursuant to 326 IAC 2-5.1-2(f)(3). The annual notice shall be submitted to:

Compliance Data Section
Office of Air Quality
100 North Senate Avenue
P.O. Box 6015
Indianapolis, Indiana 46206-6015

no later than March 1 of each year, with the annual notice being submitted in the format attached.

Timeliness of Reports

17) Unless otherwise specified in this approval, any notice, report, or other submission required by this approval shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.

This registration is the first air approval issued to this source. The source may operate according to 326 IAC 2-5.5.

An application or notification shall be submitted in accordance with 326 IAC 2 to the Office of Air Quality (OAQ) if the permittee proposes to modify the source in a manner that would cause the source to have the potential to emit any pollutant at a rate greater than that specified in Condition 1(a) or (b).

Sincerely,

Original Signed by Paul Dubenetzky
Paul Dubenetzky, Chief
Permits Branch
Office of Air Quality

sims

cc: File – Lake County
Lake County Health Department
Air Compliance – Rick Massoels
Northwest Regional Office
Permit Tracking – Lisa Hayhurst
Technical Support and Modeling – Michele Boner
Compliance Data Section – Karen Nowak
Air Toxics Program Development Section – Mike Brooks
Ambient Monitoring Branch – Richard Zeiler

Registration
Annual Notification

This form should be used to comply with the notification requirements under 326 IAC 2-5.1-2(f)(3)

Company Name:
Address:
City:
Authorized Individual:
Phone#:
Registration #:

I hereby certify that East Chicago Waterway Management District is still in operation and is in compliance with the requirements of Registration 089-15320-00471.

Name (typed):
Title:
Signature:
Date:

Indiana Department of Environmental Management
Office of Air Quality

Technical Support Document (TSD) for a New Source Construction Registration

Source Background and Description

Source name:	East Chicago Waterway Management District
Source Location:	4522 Indianapolis Blvd.
County:	Lake
SIC Code:	9511
Operation Permit No.:	R 089-15320-00471
Permit Reviewer:	Mack E. Sims

The Office of Air Quality (OAQ) has reviewed an application from East Chicago Waterway Management District (ECWMD) relating to the construction and operation of the Indiana Harbor and Canal Confined Disposal Facility (CDF). The CDF is to be located at the former Energy Cooperative Inc. (ECI) site bordered by Cline Ave. to the north and Indianapolis Blvd. to the east in East Chicago, Indiana. ECWMD will be the owner of the CDF and the United States Army Corps of Engineers (USACE) will be the operator of the CDF.

Dredging involves the removal of accumulated bottom sediment from navigation waterways. To establish navigation depths adequate to allow deep-draft vessels to pass through the federal channel, removing sediment from the federal channel is required. The task of maintaining the navigation waterways falls to the USACE. Permits for the disposal of dredge or fill materials into waters of the United States are normally issued through USACE district offices however, for the disposal of maintenance dredgings conducted by the USACE, the USACE does not issue itself a permit.

CDFs are diked structures that have been built for the disposal of dredged material where in-water placement or beneficial use are not acceptable. The size and design of each CDF is site-specific depending on the location, the nature and potential amount of sediments, and how it will be used or function once it is full or no longer receiving dredged material. Confined disposal is the most commonly used management practice for contaminated sediments dredged for navigation and environmental remediation.

The Indiana Harbor and Canal CDF will cover approximately 134 acres and accommodate 4.83 million cubic yards of dredged material over its 30 year operating life. The CDF will serve as a disposal facility for sediments dredged out of the Indiana Harbor and Canal by the USACE. The sediments are contaminated with a variety of contaminants that require proper disposal. The site chosen for the CDF (IDEM has no authority regarding siting issues) consists of about 164 acres of land formerly occupied by an oil refinery and subsequently acquired by ECI.

Following ECI's bankruptcy and abandonment of the site, the city of East Chicago became owner and in 1994 the property was transferred to the ECWMD. The ECI site currently has open Resource Conservation and Recovery Act (RCRA) status. The ECI site previously housed RCRA hazardous waste incinerators. These structures were razed along with the rest of the above ground structures, but were never closed in conformance with the RCRA regulations. Extensive soil and groundwater contamination remains on the site. Use of the site for the CDF is contingent upon the completion of specific RCRA closure and corrective action features that will be integrated into the CDF design and construction. The CDF will isolate and contain the onsite contamination in compliance with RCRA requirements. The CDF will act as the final RCRA cap for that portion of the ECI site upon which the CDF is constructed.

Initial construction activities at the site, scheduled to begin in the summer of 2002, will begin to address RCRA requirements. Dredging activities and the placement of contaminated sediment on the site is not scheduled to begin until 2005.

In addition to the air permit required, other permits and certifications under the IDEM's review include 401 Water Quality Certification, Facility Construction Permit, Storm Water/National Pollutant Discharge Elimination System (NPDES) Permit and Toxic Substance Control Act (TSCA) Risk-Based Disposal Approval.

Recommendation

The staff recommends to the Commissioner that the construction and operation be approved. This recommendation is based on the information cited in this document and the conditions established by the registration.

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on February 22, 2002 with additional information received on May 9, 2002, May 13, 2002, May 23, 2002 and June 10,2002.

Emission Estimates

The U.S. Environmental Protection Agency (USEPA) and the U.S. Army Corps of Engineers (USACE) have sampled bottom sediments in the Indiana Harbor and Canal. The USEPA collected grab samples in 1977 and core samples in 1990, 1991, and 1992. The USACE collected grab samples in 1987, 1988 and 1993. The sampling and testing revealed that the bottom sediments range from oily silt to gray sand and gravel and contained heavy metals, organics, PCBs and nutrients. A report on the sediment sampling is contained in the document "USEPA 1996 Assessment of Sediment on the Indiana Harbor Area of Concern" is included in Appendix B.

Using the average concentrations developed above, emissions of volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs) were calculated for three emission pathways: sediment relocation (dredging and transport), exposed and drying sediment, and submerged sediment. A mathematical model developed by Dr. Louis J. Thibodeaux was used to determine VOC emissions. The rate of volatilization (process by which a compound passes into the air from a solid or liquid surface) is related to the pollutant concentrations in the sediment. Theoretical chemodynamic models for organic pollutants in dredged materials were used to estimate potential emissions rates for VOCs to the air. The models were developed to provide information on the quantities of mass flux into the air.

USACE contacted Corps Waterways Experiment Station (WES) to perform laboratory volatilization and odor analysis to confirm that the models were conservative. WES reported results in "Laboratory Assessment of Volatilization from Indiana Harbor Sediment" (September 1997), is included in Appendix C.

USACE compared laboratory and experimental fluxes to modeled fluxes and reported in "Indiana Harbor Volatilization and Odor Analysis" (December 1998), is included in Appendix D.

Comparison of measured flux to modeled flux indicated the model was conservative in that it overestimated the actual flux. The result was that flux rates in the model were conservatively high and represented worst case conditions.

Particulate matter emissions from the CDF occurring when the soil and exposed sediment dries out were determined using a model developed by Evans and Cooper (1980). Emissions from contaminants bound to PM_{10} were derived from sediment concentrations of the contaminants and estimated PM_{10} emissions. PM_{10} emissions were estimated using formulas from AP-42 Supplement B.

A copy of the air emission estimations provided with the application is included in Appendix A.

Construction related particulate matter emissions associated with the construction of the CDF are estimated to be 41.7 tons per year. The USEPA considers construction related emissions to be temporary emissions and they are not considered in the applicability determination for PSD, regardless of the magnitude of the emissions. State rules do not specifically address construction related emissions. Therefore, the construction related emissions were not considered in determining the permitting level for the CDF. However, the registration does require compliance with the applicable provisions of the Lake County Fugitive PM Control rule (326 IAC 6-1-11.1) and requires corrective action whenever PM emissions are visible.

Reporting of emissions will be required during the operation (dredging/placement activities) of the CDF. Sediment samples will be analyzed prior to each dredging event in order to characterize the contamination. The IDEM, ECWMD, and the USACE will develop a protocol for determining the level of sampling and analysis that is necessary in the annual demonstration that combined HAP emissions will remain less

than 25 tons per year. The actual amount of sediments placed in the CDF will be reported on a quarterly basis.

Potential To Emit

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as "the maximum capacity of a stationary source or emissions unit to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U.S. EPA, the department, or the appropriate local air pollution control agency."

Pollutant	PTE (tons/year)
PM	12.5
PM_{10}	12.5
SO_2	0
VOC	7.67
CO	0
NO_2	0

HAP's	PTE (tons/year)
napthalene	1.66
toluene	0.93
m-xylene/p-xylene	0.67
benzene	0.64
dibenzofuran	0.28
styrene	0.21
o-xylene	0.21
ethylbenzene	0.07
PCBs	0.05
manganese compounds	0.02
lead compounds	0.01
chromium compounds	0.005
arsenic compounds	0.0006
DEHP	0.0003
cadmium compounds	0.0001
cyanide compounds	0.00002
mercury compounds	0.000009
Totals	4.76

The potential to emit (as defined in 326 IAC 2-1.1-1(16)) of particulate matter (PM/PM_{10}) is less than 100 tons per year. Therefore, the source is not subject to the provisions of 326 IAC 2-7 (Part 70 Permit Program).

The potential to emit (as defined in 326 IAC 2-1.1-1(16)) of particulate matter (PM/PM_{10}) is greater than or equal to 5 tons per year and less than 25 tons per year. Therefore, the source is subject to

the provisions of 326 IAC 2-5.1-2 (Construction of New Sources: Registration).

The potential to emit (as defined in 326 IAC 2-1.1-1(16)) of volatile organic compounds (VOC) is less than 25 tons per year. Therefore, the source is not subject to the provisions of 326 IAC 2-7 (Part 70 Permit Program).

The potential to emit (as defined in 326 IAC 2-1.1-1(16)) of volatile organic compounds (VOC) is less than 10 tons per year. Therefore, the source would not be subject to the provisions of 326 IAC 2-5.1-2 (Construction of New Sources: Registration) on the basis of VOC emissions.

The potential to emit (as defined in 326 IAC 2-1.1-1(16)) of any single HAP is less than 10 tons per year and the potential to emit (as defined in 326 IAC 2-1.1-1(16)) of combined HAPs is less than 25 tons per year. Therefore, the source is not subject to the provisions of 326 IAC 2-7 (Part 70 Permit Program).

County Attainment Status

The source is located in Lake County.

Pollutant	Status
PM_{10}	moderate nonattainment
SO_2	primary nonattainment
Ozone	severe nonattainment
CO	attainment/unclassifiable
NO_2	attainment/unclassifiable
Lead	attainment/unclassifiable

(a) Volatile organic compounds (VOC) are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. Lake County has been designated as nonattainment for ozone. Therefore, VOC emissions were reviewed pursuant to the requirements for Emission Offset, 326 IAC 2-3.

(b) Lake County has been classified as nonattainment for PM_{10} and SO_2. Therefore, these pollutants were reviewed pursuant to the requirements for Emission Offset, 326 IAC 2-3.

Source Status

New Source PSD Definition (emissions after controls, based on 8,760 hours operation per year at rated capacity and/or otherwise limited):

Pollutant	PTE (tons/year)
PM	12.5
PM_{10}	12.5
SO_2	0
VOC	7.67
CO	0
NO_X	0
Single HAP	1.66
Combination HAPs	4.76

(a) This new source is not a major stationary source because particulate matter less than 10 microns (PM_{10}) is not emitted at a rate of 100 tons per year or greater. Therefore, pursuant to 326 IAC 2-3, the Emission Offset requirements do not apply.

(b) This new source is not a major stationary source because volatile organic compounds (VOC) are not emitted at a rate of 25 tons per year or greater. Therefore, pursuant to 326 IAC 2-3, the Emission Offset requirements do not apply.

(c) This new source is not a major stationary HAP source because no single HAP equals or exceeds 10 tons per year and the combination of HAPs is less than 25 tons per year. Therefore, pursuant to 326 IAC 2-4.1, the New Source Toxics Control requirements do not apply.

Part 70 Permit Determination

326 IAC 2-7 (Part 70 Permit Program)

This new source is not subject to the Part 70 Permit requirements because the potential to emit (PTE) of:

(a) each criteria pollutant is less than 100 tons per year,

(b) a single hazardous air pollutant (HAP) is less than 10 tons per year, and

(c) any combination of HAPs is less than 25 tons per year.

Federal Rule Applicability

There are no New Source Performance Standards (326 IAC 12) and 40 CFR Part 60 applicable to this facility.

There are no National Emissions Standards for Hazardous Air Pollutants (NESHAPs) 40 CFR Part 63 applicable to this facility.

State Rule Applicability

326 IAC 2-3 (Emission Offset)

The source is not subject to the requirements of 326 IAC 2-3 because particulate matter emissions are not emitted at a rate of 100 tons per year or more and VOC emissions are not emitted at a rate of 25 tons per year or more.

326 IAC 2-4.1 (Major Source of Hazardous Air Pollutants)

The source is not subject to the new source MACT requirements because no single HAP is emitted at a rate of 10 tons per year and combined HAPS are not emitted at a rate of 25 tons per year.

326 IAC 2-6 (Emission Reporting)

The source is not subject to 326 IAC 2-6 (Emission Reporting), because it is located in Lake County and the potential to emit VOC does not equal or exceed ten (10) tons per year. Should the potential to emit VOC equal or exceed ten (10) tons per year the source would be subject to this rule. Pursuant to this rule, the owner/operator of the source must annually submit an emission statement for the source. The annual statement must be received by April 15 of each year and contain the minimum requirements specified in 326 IAC 2-6-4. The submittal shall cover the period defined in 326 IAC 2-6-2(8) (Emission Statement Operating Year)

326 IAC 5-1 (Opacity Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in the approval:

a) Opacity shall not exceed an average of twenty percent (20%) any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six hour period.

326 IAC 6-1-10.1 (Nonattainment Area Particulate Limitations: Lake County PM_{10} Emission Requirements)

The source is not subject to the requirements of this rule because it is not one of the listed sources, facilities or operations.

326 IAC 6-1-11.1 (Lake County Fugitive PM Control Requirements)

The source is subject to the requirements of 326 IAC 6-1-11.1 (Lake County Fugitive Particulate Matter Control Requirements) because the source has the potential to emit fugitive particulate matter at a rate of five (5) tons or more per year and is located in Lake County. Pursuant to 326 IAC 6-1-11.1 (Lake County Fugitive Particulate Matter Control Requirements), the following particulate matter emission limitations, recordkeeping and reporting requirements shall apply:

a) The average instantaneous opacity of fugitive particulate emissions from unpaved roads and parking lots shall not exceed ten percent (10%).

b) The average instantaneous opacity of fugitive particulate emissions from batch transfer shall not exceed ten percent (10%).

c) The opacity of fugitive particulate emissions from storage piles and exposed areas shall not exceed ten percent (10%) on a six (6) minute average.

d) For material transportation activities:

i) There shall be a zero (0) percent frequency of visible emission observations of material during the inplant transportation of material by truck or rail at any time.

ii) The opacity of fugitive particulate emissions from the inplant transportation of material by front end loaders and skip hoists shall not exceed ten percent (10%) by averaging three (3) opacity readings taken at five (5) second intervals.

e) Any facility or operation not specified in this rule shall meet a twenty percent (20%), three (3) minute average opacity standard.

f) The source shall be in violation of this rule when a qualified representative of the commissioner or USEPA observes an exceedence of any of the emission limitations contained in a) through e).

g) The permittee shall keep the following documentation to show compliance with each of its control measures and control practices:

i) A map or diagram showing the location of all emission sources controlled, including the location, identification, length, and width of roadways.

ii) For each application of water or chemical solution to roadways, the following shall be recorded:

A) The name and location of the roadway controlled.

B) Application rate.

C) Time of each application.

D) width of each application.

E) Identification of each method of application.

F) Total quantity of water or chemical used for each application.

G) For each application of chemical solution, the concentration and identity of the chemical.

H) The material data safety sheets for each chemical.

iii) For application of physical or chemical control agents not covered above, the following:

A) The name of the agent.

B) Location of application.

C) Application rate.

D) Total quantity of agent used.

E) If diluted, percent of concentration used.

F) The material data safety sheets for each chemical.

iv) A log recording incidents when control measures were not used and a statement of explanation.

h) Copies of all records required by this condition shall be submitted to the department within twenty (20) working days of a written request by the department.

i) The records required by this condition shall be kept and maintained for at least three (3) years and shall be available for inspection and copying by department representatives during working hours.

j) A quarterly report shall be submitted to the department stating the following:

i) The dates any required control measures were not implemented.

ii) A listing of those control measures.

iii) The reasons that the control measures were not implemented.

iv) Any corrective action taken.

v) The quarterly report shall be submitted to the department thirty (30) days from the end of a quarter. Quarters end March 31, June 30, September 30, and December 31. The report shall be submitted to:

Compliance Data Section
Office of Air Quality
100 North Senate Avenue
P.O. Box 6015
Indianapolis, Indiana 46206-6015

326 IAC 6-4 (Fugitive Dust Emissions)

This source is subject to the requirements of 326 IAC 6-4 because the rule applies to all sources of fugitive dust. Pursuant to 326 IAC 6-4, the Permittee shall not allow the generation of particulate matter (fugitive dust) to the extent that some portion of the material escapes beyond the property line or boundaries of the property, right-of way, or easement on which the source is located. A source shall be in

violation of this rule when during operation of the CDF a qualified representative of the commissioner:

a) Observes visible emissions crossing the property line of a source at or near ground level; or

b) Measures ground level ambient air concentrations exceeding fifty (50) micrograms (total suspended particulate) per cubic meter above background concentrations for a sixty (60) minute period.

The source shall not be in violation of this rule during construction where every reasonable measure has been taken in minimizing fugitive dust emissions.

326 IAC 8-1-6 (General Provisions Relating to VOC Rules)
The source is not subject to the BACT requirements of this rule because potential emissions of VOC do not exceed 25 tons per year. There are no other Article 8 rules applicable to the source.

Public Meeting and Written Comments

On April 30, 2002 at 6:00 P.M., the OAQ held a public meeting to discuss issues related to the application for an air registration. The public meeting was held at the East Chicago Public Library, Robert A. Pastrick Branch located at 1008 West Chicago Avenue in East Chicago, Indiana. About fifty (50) to sixty (60) members of the public attended the meeting that ran from 6:00 to 7:45 P.M.

Comment/Question

How does this permit review fit in the overall hierarchy of our permit levels? Does action have to be taken by April 23? What actions have been taken?

IDEM OAQ Response

A registration is a direct final approval for sources that will emit small quantities of air pollution. By state rule, the registration process does not require that IDEM provide a comment period or an opportunity for a public hearing. That is because the impacts of sources small enough to qualify for this level of approval are expected to be insignificant and because there are few or no substantive air pollution control rules that apply to sources that emit less than 25 tons per year of any air pollutant.

In this case, however, the OAQ held a pubic meeting to provide an opportunity for the public to have input into the OAQ's decision on the pending application and to explain the IDEM's role in regulating the air emissions from the proposed project.

The OAQ is required by state law to issue or deny an application for a new source registration within a sixty (60) day time period. The application was received by the OAQ on February 22, 2002 making April 23, 2002 the end of the 60 day time period. The time period may be

extended with the applicant's consent. In this case the ECWMD agreed to extend the time period to 75 days to allow time to hold the public meeting. This agreement was the only action taken on the application prior to the April 30 public meeting. The time period was subsequently suspended so that the OAQ could incorporate certain elements of the project that are designed to protect public health into the registration.

Comment/Question

How can IDEM consider the application complete when additional research is being conducted regarding the risks? Was the risk assessment based on cumulative risk (including existing emissions) or incremental risk of project?

IDEM OAQ Response

It is likely that today's standards will change in the future. The EPA and others have spent more than two decades developing an extensive set of risk assessment methods, tools, and data that serve the purpose of estimating health risk for many Agency programs. Although significant uncertainties remain, EPA's risk assessment science has been extensively peer-reviewed, is widely used and understood by the scientific community, and continues to expand and evolve as scientific knowledge advances. The initial risk assessment was completed in 1995 as part of the Final Environmental Impact Statement and concluded the facility would pose little risk to the adjacent community.

The initial 1995 risk assessment had three objectives: 1) to compare the proposed CDF particulate and volatile toxics loadings to loadings reported in the Toxic Release Inventory and reported in previous air pollution studies for the area around Northwest Indiana; 2) to compare the expected particulate and volatile loadings from the CDF to the expected loadings from the ECI site without the CDF; and 3) to assess the human health risk posed by inhalation of potential airborne contaminants released from the proposed CDF. The cancer risks developed were based on cumulative risk. The report on the 1995 risk assessment will be included as an appendix to this document.

A Supplemental Risk Assessment is underway that will address topics that were not part of the 1995 risk assessment. These new topics include: ingestion and dermal exposure; children's health considerations; additional contaminants that weren't part of the 1995 study; volatilization of pollutants from dredging and transport of contaminated sediments (as well as from those placed in the CDF); and more refined estimates of contaminants volatilizing from the CDF. The completion date for the Supplemental Risk Assessment is unknown as of this date. However, dredging is not scheduled to take place until 2005 and the report will be available prior to the beginning of dredging operations.

Risk assessments are generally not a part of the review process for a registration decision. In the case of this project, IDEM expects that work to better understand possible risks will continue throughout the project's duration. The OAQ has included a condition in the registration that will require the project to be halted if the OAQ

determines that emissions result in an unacceptable risk to public health. The OAQ would consider future information such as the Supplemental Risk Assessment, air monitoring programs, the sediment sampling data, revised health benchmarks or other relevant information in making such a determination.

Comment/Question

Is the project already a done deal, or will it be held up until all regulations are satisfied? Can the public be kept informed of all applications for CDF permits?

IDEM OAQ Response

The project has satisfied the requirements of the National Environmental Policy Act (NEPA) of 1969 and has received congressional funding. NEPA requires federal agencies to prepare Environmental Impact Statements (EIS) for major actions. The purpose of the EIS is to evaluate environmental impacts of alternatives for proposed federal action before decisions are made and actions are taken. The purpose of the dredging is to return the harbor and canal to navigational depths by removing the contaminated sediment. This has both economic and environmental benefits for the area. The design of the CDF will address the RCRA closure and corrective action requirements associated with the former ECI site and will comply with the Toxic Substance Control Act (TSCA) requirements for disposal of PCB contaminated sediments. However, the ECWMD and USACE are required to obtain all necessary permits to comply with all State and Federal rules for which IDEM has jurisdiction in order for the project to move forward. The following table list the approvals required for the CDF project and the timelines involved with each.

IDEM OFFICE	TYPE PERMIT/APPROVAL	TIMELINE
OAQ	Registration	60 Days
OWQ	Storm Water Permit	6 Months
OWQ	401 Water Quality Certification	2-3 Years
OWQ	Waste Water Treatment Plant Facility Construction Permit	2 Years
OWQ	NPDES Operating Permit	3 Years
OLQ	TSCA Certification	2 Years
OLQ will ensure compliance with Indiana Solid Waste Rules for disposal of dredged material.		
OLQ will ensure compliance with RCRA requirements both for closure and for corrective action.		

Listed below are the phone numbers to the receptionist for the IDEM offices involved in permitting the CDF. The receptionist will be able to forward you to the correct office to inquire about permit applications.

Office of Air Quality	317-233-0178
Office of Water Quality	317-232-8476
Office of Land Quality	317-233-3656

Comment/Question

How can the public appeal IDEM's decision?

IDEM OAQ Response

IDEM OAQ's decision on the permit can be appealed by the public. All persons at the public meeting who submitted questions or comments to OAQ will be added to our database and receive the OAQ decision on the application along with information on how to appeal the decision.

Comment/Question

There was a request for technical information that formed the basis for the emissions calculations, but wasn't included in the permit application.

IDEM OAQ Response

As mentioned in the "Emissions Estimate" section of this document, the technical information used to form the basis for the emissions estimations is included as appendices to this document.

Comment/Question

It was felt that the application indicated that PM emissions were above the major source thresholds.

IDEM OAQ Response

In the application the particulate matter emissions are listed as $12.5^{(2)}$, indicating that there is a footnote reference. The commentator interpreted the emissions as 12.5^2 (i.e. 12.5 x 12.5), which would be 156.25 tons per year and clearly exceeding the major source threshold of 100 tons for Lake County. Particulate matter emission estimates during the operation of the CDF are estimated to be 12.5 tons per year.

Comment/Question

Detailed technical questions were asked about the half-life of various pollutants when ingested by humans, animals, and plants and whether the emission estimates took into account various chemical and physical transformations that could occur in the CDF.

IDEM OAQ Response

Volatilization (the process by which a compound passes into the air from a solid or liquid surface) of compounds is an ongoing science. Volatilization is complicated and can involve a number of transfer pathways. To quantify the volatilization of contaminants to air, the major sources, pathways and external parameters which affect the transfer must be addressed. The supplemental risk assessment will use the best available methods to address both the chemodynamic processes that influence the volatilization of contaminants during dredging, transport, and disposal, as well as the impacts of the resultant environmental exposure could have on public health. The results of the supplemental risk assessment will be available for public review. The air emissions model will be reviewed periodically to ensure that emissions are estimated using the best available methods. The IDEM expects that the risks associated with this project will continue to be evaluated as the underlying science evolves.

Comment/Question

The adequacy of the perimeter monitoring was questioned. The frequency and the lag time in getting/confirming results especially are issues.

IDEM OAQ Response

The perimeter air monitoring is being performed consistent with the guidelines and procedures that are used for ambient air monitoring across the state. This will allow the results of the monitoring to be compared to data collected at other monitoring sites. While the perimeter monitoring will provide information that will be useful for assessing the impact that the project will have on air quality, it is not the primary means of limiting that impact.

An Environmental Protection Plan is required for each portion on the project. Each Plan will include measures to limit the release of contaminants to the environment and an on-site air monitoring program to demonstrate that emissions to not adversely affect the community. The monitoring plans may vary depending on the nature of the work being done. The monitoring plan for construction of the cutoff wall includes real-time monitoring for VOCs in the immediate vicinity of the work area. Actions to reduce VOC emissions are required any time that this monitoring indicates that work activity is causing VOC concentrations to increase by 5 parts per million or more. Corrective actions to reduce particulate matter emissions are required if there are visible emission in the work area. The monitoring plan also requires periodic monitoring for PCBs and benzene. The results of this monitoring will be available within 48 hours. Corrective actions are required if the data indicates that any work activity is persistently causing the concentration of PCBs at the work site to increase by 0.1 mg per cubic meter or causing the concentration of benzene to increase by 0.5 parts per million. The registration incorporates elements of this plan. It also requires that the ECWMD keep records of the monitoring data on-site and requires the reporting of monitoring data that is above the action levels along with the actions taken to reduce emissions. A copy

of the specifications for the air emissions construction monitoring for the cutoff wall is attached as Appendix F to this document.

The IDEM will remain involved in the development of future Environmental Protection Plans to ensure that air monitoring programs are in place to demonstrate that emissions do not adversely affect the community.

Comment/Question

There were questions about how IDEM is going to be monitoring the water, sediment, and air to determine how the implementation of the project would affect the environment compared to what was presented in the EIS. What will be done if the effect is worse than expected?

IDEM OAQ Response

Monitoring of the air is discussed above. Monitoring of the water will be done by the Office of Water Quality (OWQ), however the Environmental Protection Plan which the OAQ has made a requirement of the registration will also include provisions for protection of land resources, work area limits, an erosion control plan, protection of water resources, and protection of fish and wildlife. Regarding the sediment, the registration requires that sediment samples be taken prior to the start of dredging activities in a given area of the canal and harbor. This sampling data and the anticipated dredging and placement volumes will be used in the emissions model to estimate emissions for the upcoming year, prior to the actual dredging taking place. The registration also requires that actual dredging and placement volumes be reported to IDEM on a quarterly basis. It will take about six (6) months to analyze the sediment samples.

These three provisions will provide assurance that the best available information is used to demonstrate that emissions will not exceed the thresholds for a registration for the duration of the project. This information could also be compared to the emission rates used in the risk assessments. If the emissions information, air monitoring data, or any other relevant information demonstrates to the OAQ that the project poses an unacceptable risk to public health, the registration requires that contaminant-related activities that result in air emission cease.

The registration requires that the air emissions model be revisited periodically to ensure that the most scientifically sound method of estimating is used.

Comment/Question

The rest of the remarks were to the effect that the CDF should not be allowed and what can be done to stop it. There was one last question on how to effectively object to the CDF itself prior to OAQ’s decision on the air permit.

IDEM OAQ Response

The project has satisfied the requirements of the National Environmental Policy Act (NEPA) of 1969 and has received congressional funding. NEPA requires federal agencies to prepare Environmental Impact Statements (EIS) for major actions. The purpose of the EIS is to evaluate environmental impacts of alternatives for proposed federal action before decisions are made and actions are taken. The project still requires all necessary State and Federal permits before proceeding.

The OAQ has no authority in regards to siting issues. This is determined on the local level. The OAQ evaluates air permit applications based on annual emissions and technical and health-based standards established by State and Federal law. If the applicant demonstrates that the proposed facility will comply with these requirements, the OAQ is legally obligated to issue an approval. The approval lists the facilities covered, identifies the applicable air pollution control standards, establishes how the facility will comply with those standards, and contains provisions for monitoring, record keeping, and reporting that are adequate to demonstrate compliance on an ongoing basis. Prior to making a final decision on the application, the OAQ makes preliminary findings available for public review and holds a public hearing if required by the level of approval. The level of approval for this application is a direct final and does not require a public hearing. Therefore, the OAQ held a public meeting to provide an opportunity for the public to have input into OAQ's decision on the pending air permit application.

Conclusion

The construction and operation of the Indiana Harbor and Canal Confined Disposal Facility shall be subject to the conditions of the attached proposed registration 089-15320-00471.